

FIG. 1

5nm/100A

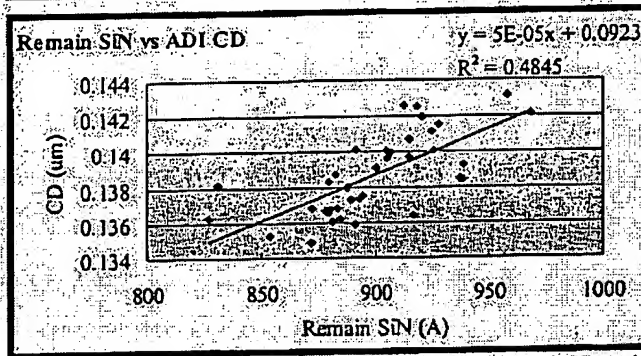


FIG. 2A

1nm/100A

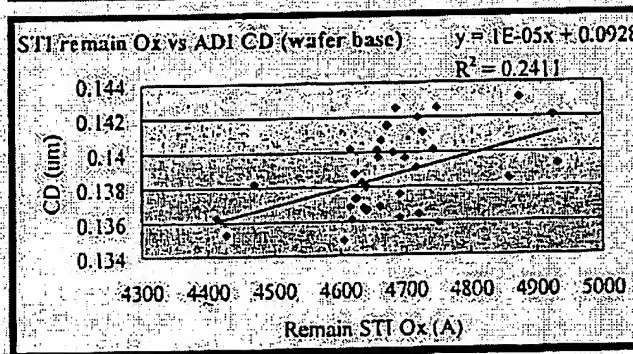


FIG. 2B

$$CD = 5 \times 10^{-3} \cdot SiN + 0.0949$$

$$(CD - CD_{avg}) = 5 \times 10^{-3} (SiN - SiN_{avg})$$

$$(CD - 0.138) = 5 \times 10^{-3} (SiN - 882)$$

$$\Delta E_{\text{dose}} = \lambda_{\text{dose}} \times 5 \times 10^{-3} (SiN - 882)$$

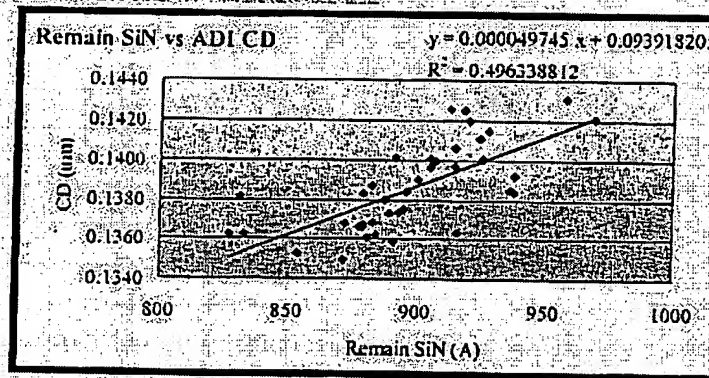


FIG. 3

Segment 1  $\Delta CD = -0.4929 \times (SiN - 805) / 10^\circ$  ;  $SiN < 870^\circ$   
 Segment 2  $\Delta CD = 1.0545 \times (SiN - 891) / 10^\circ$  ;  $870^\circ \leq SiN < 920^\circ$   
 Segment 3  $\Delta CD = -1.8435 \times (SiN - 942) / 10^\circ$  ;  $920^\circ \leq SiN < 940^\circ$   
 Segment 4  $\Delta CD = 1.3408 \times (SiN - 931) / 10^\circ$  ;  $SiN \geq 940^\circ$

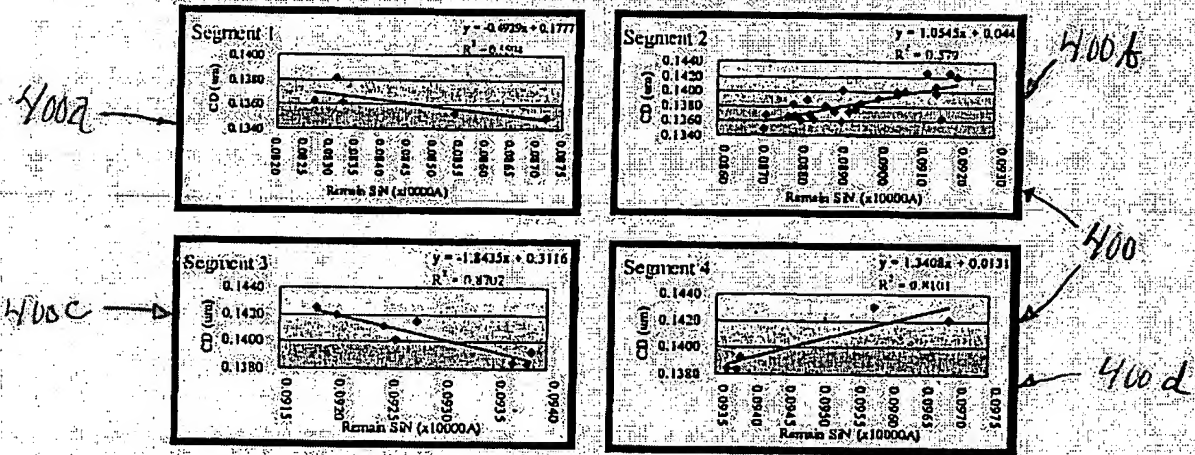


FIG. 4



$$CD = -35485.98743 \times SiN^3 + 9437.96146 \times SiN^2 \\ - 835.46149 \times SiN + 24.75252$$

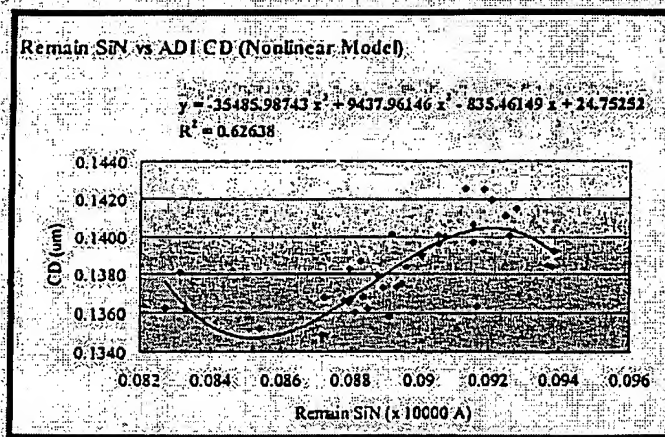


FIG. 5

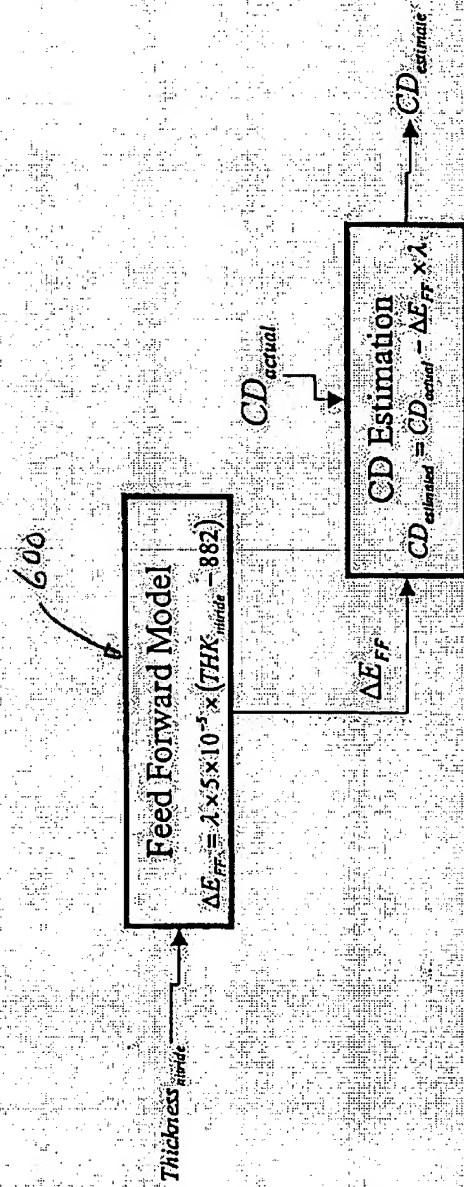


FIG. 6

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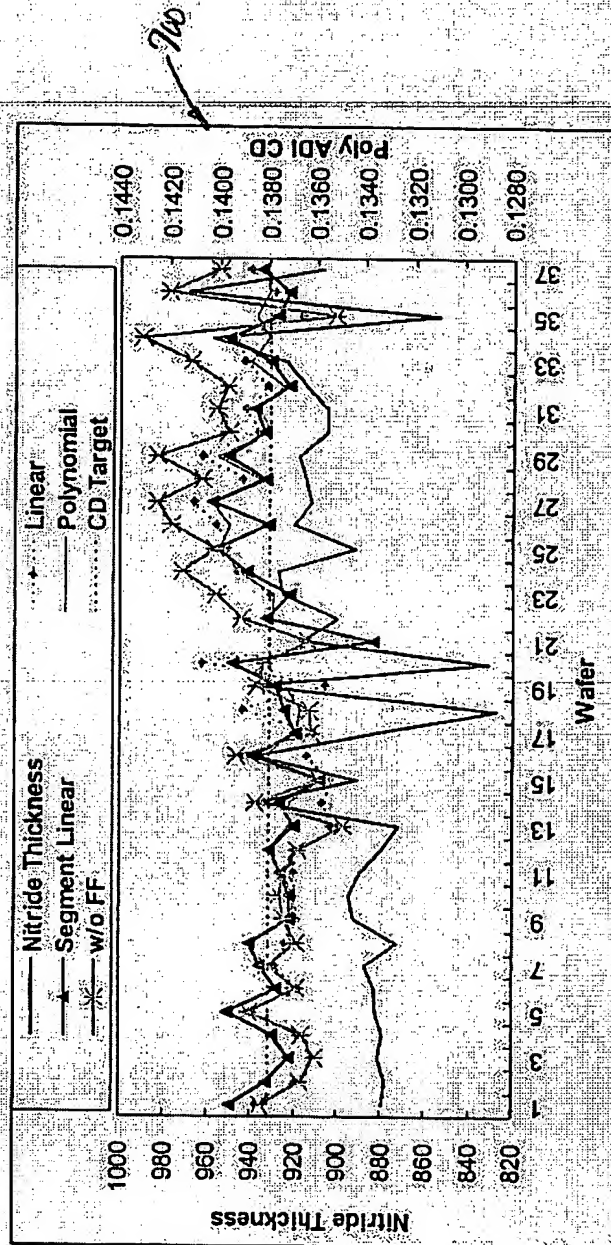


FIG. 7

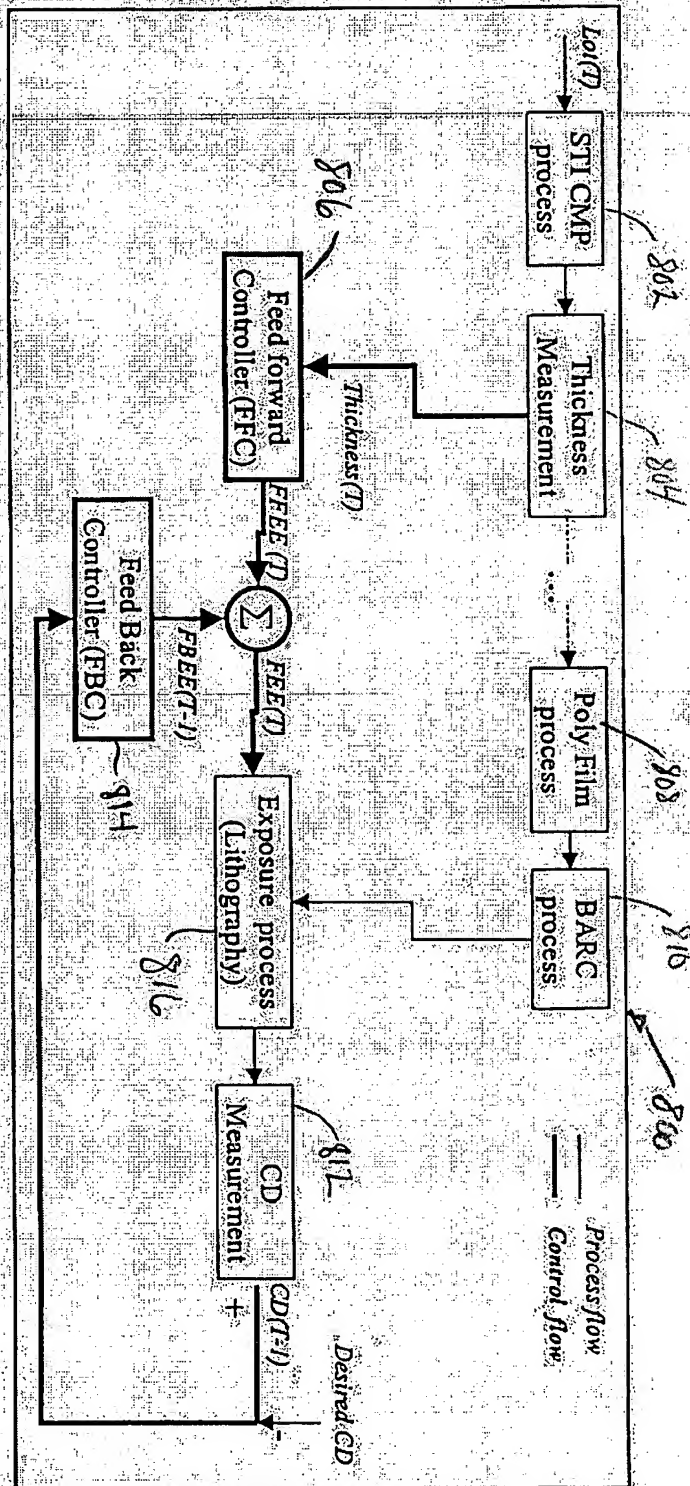


FIG. 8

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